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EXAMINER

THAI, CUONG T

ART UNIT	PAPER NUMBER
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2173

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/411,642

Applicant(s)

NITSCHKE, GENE M.

Examiner

CUONG T THAI

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/03/04 Remand to Examiner.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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PART III DETAIL ACTION

1. This action is responsive to August/03/2004 Remand to Examiner.
2. The prosecution is hereby REOPENED. Claims 1-21 are presented for examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 6, 9-14, 16 and 21 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yair (USPN: 5,787,194) in view of Goldberg (USPN: 6,341,183).

As per claims 1 (system), 10 (storage-medium), and 12 (method); Yair teaches a system that allows an input segmented image to be manipulated comprising:

a segmentation classification association circuit that associates a segmentation classifier and at least one segment of the input segmented image is taught by Yair as the technique of provides image processing apparatus for segmenting an input image into image portions ...the apparatus comprising identification logic for identifying connected components in the input image; classification logic for determining into which of a number of predefined classes a connected component falls (see col. 2, lines 8-14) ;

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Yair, however, does not disclose the limitations of a system that assembles a dedicated user interface and an image processing tool association circuit that determines at least one image processing tool corresponding to the segmentation classifier;

Goldberg discloses the limitations of a system that assembles a dedicated user interface as the technique of a GUI-based image acquisition interface for IDL. The interface is event driven and provides a plurality of functions that can be categorized into the following groups: CCD detector control, image display and manipulation (see col. 3, lines 59-63) and an image processing tool association circuit that determines at least one image processing tool as the technique of an event-driven graphical user interface (GUI)-based image acquisition interface for the interactive data language programming environment developed by Research Systems, Inc. (See col. 2, lines 21-25) which include Analysis Toobbox. Advantageously, a toolbox of various analytical tools can be incorporated into the GUI-based image acquisition interface (see col. 8, lines 25-28);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitations of a system that assembles a dedicated user interface and an image processing tool association circuit that determines at least one image processing tool by Goldberg into that of Yair's segment classifier invention. By doing so, the system would be enhanced by providing a GUI-based tools to an end user wherein the end user can performing editing, manipulating and controlling of image acquisition system based on user's desired manner and the system would providing real-time data analysis support for images acquired during the alignment of image acquisition analysis.

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As per claims 2 (system), 11 (storage-medium), and 13 (method); Yair discloses the invention substantially as claimed above. Yair, however, does not disclose the limitation of a user interface assembly circuit that assemble at least one selectable interface widget into at least one user interface based on the at least one image processing tool corresponding to the segmentation classifier;

Goldberg discloses the limitation of a user interface assembly circuit that assemble at least one selectable interface widget into at least one user interface based on the at least one image processing tool as the technique of an event-driven graphical user interface (GUI)-based image acquisition interface for the interactive data language programming environment developed by Research Systems, Inc. (see col. 2, lines 21-25) which include Analysis Toobbox. Advantageously, a toolbox of various analytical tools can be incorporated into the GUI-based image acquisition interface (see col. 8, lines 25-28) wherein the GUI interface program of the presentation provides the following features: pull-down menu, commonly used hardware binning options 14 are available, the available detector speeds 16 are available from a pull-down menu (see col. 4, lines 22-31) and in order to switch quickly from one set of parameters to another, the user pushes only one button 28 (see col. 4, lines 50-52);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of a user interface assembly circuit that assemble at least one selectable interface widget into at least one user interface based on the at least one image processing tool introduced by Goldberg into that of Yair's segment classifier invention. By doing so, the system would be enhanced by providing better processing tools of GUI-based interface to its end users.

As per claims 3 (system) and 14 (method); Yair discloses the invention substantially as claimed above. Yair, however, does not disclose the limitation of the system modifies the at least one segment based on a selection of the at least one image processing tool associated with the at least one user interface;

Goldberg discloses the limitation of the system modifies the at least one segment based on a selection of the at least one image processing tool associated with the at least one user interface as the technique of Four tools are described herein. They are the Fourier transform Alignment Tool, the Contrast Tool, the Wavefront Tool, and the Zernike Polynomial Tool. It is not difficult to modify the existing tools or add additional tools to expand the capabilities of the toolbox (see col. 8, lines 59-63);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of modifying the at least one segment based on a selection of the at least one image processing tool associated with the at least one user interface introduced by Goldberg into that of Yair's segment classifier invention. By doing so, the system would be enhanced by providing more varieties and selectable processing tools in GUI-based interface to end user wherein the user has capable of selecting tool based on his/her own desired manner.

As per claims 9 (system) and 21 (method); Yair discloses the invention substantially as claimed. Yair, however, does not disclose the limitation of wherein the dedicated user interface

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is a graphical user interface comprising at least one of dropdown menu, a pull-down menu, a radio button, a tab button, a segment display area or a slide bar;

Goldberg discloses the limitation of wherein the dedicated user interface is a graphical user interface comprising at least one of drop-down menu, a pull-down menu, a radio button, a tab button, a segment display area or a slide bar as the technique of the GUI interface program of the present invention provides the following features: using a pull-down menu, commonly used hardware binning options 14 are available (see col. 4, lines 22-29), nodes 26 selected by buttons 28 (see col. 4, lines 45-46), large "GO" and "STOP" buttons (see col. 5, line 11), the image size can be scaled for display from 1/4 th size to 8 times large in multiples of 1/4 size using a scroll-bar, or slide 112 (see col. 5, lines 63-65), and using the pull-down menu 508 at the top of the toolbox window, the direction of the data stripe used to access contrast can be set to vertical or horizontal (see col. 9, lines 62-64);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of wherein the dedicated user interface is a graphical user interface comprising at least one of drop down menu, a pull down menu, a radio button, a tab button, a segment display area or a slide bar introduced by Goldberg into that of Yair's segment classifier invention. By doing so, the system would be enhanced by providing more selectable tools in GUI-based interface to end user wherein the user has capability of selecting tool based on his/her desired manner.

As per claims 6 (system) and 16 (method), the limitation of a segmentation circuit that selects at least one segment is taught by Yair as the technique of identifying connected

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components in the input image; classifying the connected components by determining into which of a number of predefined classes a connected components falls, at least one of said classes indicating that the connected components is most likely to be single character; and iteratively merging and editing the connected components and reclassifying the resulting slit and/or merged connected components until an image segmentation is achieved which meets a predefined criterion (see col. 3, lines 42-50. These claims are therefore rejected for the reasons as set forth above.

5. Claims 4-5, 15 and 20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yair (USPN: 5,787,194 in view of Goldberg (USPN: 6,341,183) and further in view of Marimont et al. (USPN: 5,710,877) hereinafter Marimont.

As per claims 4 (system) and 15 (method), Yair-Goldberg disclose the invention substantially as claimed. Yair-Goldberg, however, do not disclose the limitation of a segmentation mapping circuit that determines the at least one segment based on a position of a user input device in the input segmented image;

Marimont discloses the limitation of a segmentation mapping circuit that determines the at least one segment based on a position of a user input device in the input segmented image as the technique of the discovery of a data structure representation of an image called an image structure map (ISM) that accurately and explicitly represents the geometric and topological properties of an image and allows for efficient and accurate spatial indexing of regions of an image (see col. 3, lines 9-14). Marimont's image structure map (ISM) invention further discloses input signal circuitry is circuitry for providing input signals to the processor from an input signal

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source. The input signal source may be directed by a human user or by an automatic operation under control of a processor. User input circuitry is circuitry for providing signals based on action of a user. User input circuitry can receive signals from one or more user input devices that provide signals based on actions of a user, such as a keyboard, a mouse, or stylus device (see col. 9, lines 5361). For example, a signal from a user input device indicates a position of an image if the signal includes data from which the position can be uniquely identified (see col. 10, lines 4-6);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of a segmentation mapping circuit that determines the at least one segment based on a position of a user input device in the input segmented image introduced by Marimont into that of Yair-Goldberg combined invention. By doing so, the system would be enhanced by permitting user interaction with the structures in an original image through image structure mapping.

As per claims 5 (system) and 20(method), Yair-Goldberg disclose the invention substantially as claimed. Yair-Goldberg, however, do not disclose the limitation of the segment mapping circuit highlights the at least one segment based on the position of a user input device;

Marimont discloses the limitation of the segment mapping circuit highlights the at least one segment based on the position of a user input device as the technique of the method comprises receiving an image interaction signal from the input circuitry indicating an image interaction request from a user to modify an image structure map data structure, referred to as in an image structure map, that spatial indexes a displayed original image. The displayed original

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image represents an original image data structure, referred to as an original image, having image locations therein specified according to a first coordinate system (see col. 5, lines 5-13);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of the segment mapping circuit highlights the at least one segment based on the position of a user input device introduced by Marimont into that of Yair-Goldberg combined invention. By doing so, the system would be enhanced by signaling the user to know where is the location of the image structure map from which user will interact with.

6. Claims 7 and 17-18 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yair (USPN: 5,787,194) in view of Goldberg (USPN: 6,341,183) and further in view of Lee et al. (USPN: 6,026,182) hereinafter Lee.

As per claims 7 (system) and 17 (method), Yair-Goldberg disclose the invention substantially as claimed. Yair-Goldberg, however, do not disclose the limitation of image processing tool association determines the at least one image processing tool based on the at least one of predefined configuration association data, updatable configuration association data or user configuration association data;

Lee discloses the limitation of predefined configuration association data as the technique of pre-compression extrapolation method for extrapolating image features of arbitrary configuration to a predefined configuration (see col. 22, lines 47-48);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of predefined configuration association data

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introduced by Marimont into that of Goldberg image processing tool and further into that of Yair-Goldberg combined invention. By doing so, the system would be enhanced by providing predefined configuration tool which available to image processing toolbox to its end user.

As per claim 18, due to the similarity of this claim to that of claim 17, this claim is therefore rejected for the same reason applied to claim 17.

7. Claims 8 and 19 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yair (USPN: 5,787,194) in view of Goldberg (USPN: 6,341,183) and further in view of Mahoney (USPN: 6,009,196).

As per claims 8 (system) and 19 (method), Yair-Goldberg disclose the invention substantially as claimed. Yair-Goldberg, however, do not disclose the limitation of segmentation classifier corresponds to at least one of a photographic region, a half-tone region, a text region, a line art region, a black and white region or a color region;

Mahoney discloses the missing limitation of a text region as the technique of analyzing image data, and more particular to the analysis of image data representing images containing text to classify the types of non-running text regions therein without the need for predefining structure within the image. The invention first employs the characteristics of running text regions to distinguish them from non-running text regions in a page image (see col. 1, lines 22-29);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of a text region (running text region and non-running text region) introduced by Mahoney into that of Yair-Goldberg combined invention.

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By doing so, the system would be enhanced by providing more enhanced classifier tools to its end user.

Response to Argument.

8. Appellant argues (page 7, lines 10-12) that “Yair has absolutely no disclosure, or suggestion, of, or the need for, a user interface for his image processor”. The Examiner agrees that Yair is lack of a system that assembles a dedicated user interface. However, as stated above the “a system that assembles a dedicated user interface is taught by Goldberg as the technique of a GUI-based image acquisition interface for IDL. The interface is event driven and provides a plurality of functions that can be categorized into the following groups: CCD detector control, image display and manipulation (see col. 3, lines 59-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of a system that assembles a dedicated user interface by Goldberg into that of Yair's segment classifier invention. By doing so, the system would be enhanced by providing a GUI-based tools to an end user wherein the end user can performing editing, manipulating and controlling of image acquisition system based on user's desired manner and the system would providing real-time data analysis support for images acquired during the alignment of image acquisition analysis.

Appellant argues (pages 15-20) with respect to claims 1-3, 6,9-14, 16 and 21; that “Yair contains no disclosure or suggestion of, or any need for, a user interface, let alone a dedicated used interface or a system that assembles a dedicated user interface that allows an input segmented image to be manipulate as recited in claim 1. Nor does Yair disclose a dedicated user

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input that allows an input segmented image to be manipulatedYair is directed to segmented an unsegmented , OCR input image”. Examiner disagree to this argument because Goldberg disclose a system that assemble a dedicated user interface as the technique of a GUI-based image acquisition interface for IDL. The interface is event driven and provides a plurality of functions that can be categorized into the following groups: CCD detector control, image display and manipulation (see col. 3, lines 59-63).

On the second paragraph of page 16, Appellant argues that “it is clear from this reading of Yair, that what is input to Yair is an unsegmented image that is sent to segmentation module 140.As recited in claims 1-3, 6, 9-14, 16 and 21 the claimed system, storage medium and method assemble a dedicated user interface”. Examiner do not agree to this argument because in Goldberg’s invention, the limitation of “a system that assembles a dedicated user interface is taught as the technique of a GUI-based image acquisition interface for IDL. The interface is event driven and provides a plurality of functions that can be categorized into the following groups: CCD detector control, image display and manipulation (see col. 3, lines 59-63)

On the third paragraph of page 16, Appellant argues that Yair is used to segment the unsegmented image input to the segmenter 140, not to associated a segmentation classifier and at least one segment of the input segment image as recited. Yair's classification portion or segmenter 140 is not working on a segmented image. Rather, it is segmenting an unsegmented image.. Examiner do not agree to this argument because Yair segmented image input associated a segmentation classifier and at least one segment of the input segment image as the technique of the invention provide image processing apparatus for segmenting an input image into image

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portions (see col. 2, lines 8-9), identification logic for identifying connected components in the input image (see col. 2, lines 11-12), all components of an input image are iteratively merged and split until an acceptable segmentation is achieved (see col. 2, lines 31-33), and the whole segmentation process is controlled and monitored by a classifier defined over the space of connected components with a set of classes that have meaningful segmental information (see col. 2, lines 42-45) .

On the third paragraph of page 17 and last paragraph of page 17, Appellant argues that “Yair also does not disclose an image processing tool association circuit that determines at least one image processing tool corresponding to the image classifier” and “Goldberg has nothing to do with OCR or image segmentation”. Examiner do agree that Yair fail to disclose the limitation of an image processing tool association circuit that determines at least one image processing tool corresponding to the image classifier. However, Goldberg discloses this missing limitation as the technique of GUI-based image acquisition interface (see col. 8, lines 27-28) and a toolbox of various tools (see col. 8, lines 25-26) and Goldberg also discloses the limitation of an image processing tool association circuit that determines at least one image processing tool as the technique of an event-driven graphical user interface (GUI)-based image acquisition interface for the interactive data language programming environment developed by Research Systems, Inc. (see column 2, lines 21--25) which include Analysis Toobbox. Advantageously, a toolbox of various analytical tools can be incorporated into the GUI--based image acquisition interface (see col. 8, lines 25-28).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Goldberg's GUI-based image interface and its associated toolbox into that of Yair's segmented image invention. By doing so, the system would be enhanced by providing graphical user image acquisition interface and user control toolbox to end user wherein user can analyzes and edits in image acquisition processing.

On pages 20-21; with respect to claims 2, 11, and 13; Appellant argues that "Claim 2 recites the additional feature of a user interface assembly circuit that assembles at least one selectable interface widget into at least one user interface based on the at least one image processing tool corresponding to the segmentation classifier. Neither Yair nor Goldberg discloses or suggest an image processing tool corresponding to an image segmentation classifier." Examiner, however, do not agree to this argument because Goldberg discloses the limitation of a user interface assembly circuit that assemble at least one selectable interface widget into at least one user interface based on the at least one image processing tool as the technique of an event-driven graphical user interface (GUI)-based image acquisition interface for the interactive data language programming environment developed by Research Systems, Inc. (see col. 2, lines 21-25) which include Analysis Toobbox. Advantageously, a toolbox of various analytical tools can be incorporated into the GUI-based image acquisition interface (see col. 8, lines 25-28) wherein the GUI interface program of the presentation provides the following features: pull-down menu, commonly used hardware binning options 14 are available, the available detector speeds 16 are available from a pull-down menu (see col. 4, lines 22-31) and in order to switch

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quickly from one set of parameters to another, the user pushes only one button 28 (see col.4, lines 50-52);

On the third paragraph of page 21; with respect to claims 6 and 16; Appellant argues that “Neither Yair nor Goldberg discloses the additional feature recited in these claims, e.g., further comprising a segmentation selection circuit that selects the at least one segment.” Examiner, however, do not agree to this argument because the limitation of segmentation selection circuit that selects the at least one segment is taught by Yair as the technique of identifying connected components in the input image; classifying the connected components by determining into which of a number of predefined classes a connected components falls, at least one of said classes indicating that the connected component is most likely to be single character; and iteratively merging and slitting the connected components and reclassifying the resulting slit and/or merged connected components until an image segmentation is achieved which meets a predefined criterion (see column 3, lines 42-50).

On the last paragraph of page 24 to the first paragraph of page 25, Appellant argues that “there is no proper motivation to modify Goldberg with Marimont because Goldberg has no image structure map with which user may interact. And reversal of the rejection of claims 4, 5, 15 and 20 under 35 U.S.C. 103 (a) as unpatentable over the combination of Yair, Goldberg and Marimont is respectfully solicited. Examiner, however do not agree to these contention because: As indicated by the Examiner that “It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the limitation of a segmentation mapping circuit that determines the at least one segment based on a position of a user input device in the

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input segmented image introduced by Marimont into that of Yair-Goldberg combined invention.

By doing so, the system would be enhanced by permitting user interaction with the structures position of an original image through image structure mapping (motivation).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CUONG T THAI whose telephone number is (703) 308-7234 through the month of October, 2004 and at (571) 272-4056 thereafter. The examiner can normally be reached on 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Cabeca can be reached on (703) 308-3116 through the month of October, 2004 and at (571)272-4048 thereafter. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CUONG T THAI
Examiner
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September 17, 2004.



RAYMOND J. BAYERL
PRIMARY EXAMINER
ART UNIT 2173